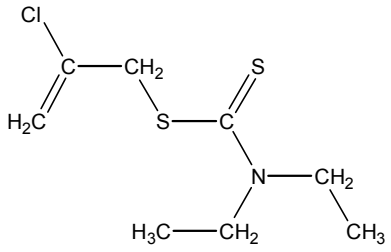
SULFALLATE
CAS No. 95-06-7
First Listed in the *Second Annual Report on Carcinogens*



CARCINOGENICITY

Sulfallate is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity in experimental animals (IARC V.30, 1983; NCI 115, 1987). When administered in the diet, sulfallate induced mammary adenocarcinomas in female rats and mice, squamous cell carcinomas of the forestomach in male rats, and alveolar-bronchiolar adenomas in male mice. When administered intraperitoneally, sulfallate induced pulmonary-bronchiolar adenomas in mice of both sexes (Maronpot et al., 1988).

There are no data available to evaluate the carcinogenicity of sulfallate in humans (IARC V.30, 1983).

PROPERTIES

Sulfallate is the generic trade name for *N*,*N*-diethyldithiocarbamic acid 2-chloroallyl ester. Sulfallate is a clear amber oil that is slightly soluble in water and soluble in most organic solvents. When heated to decomposition, it emits toxic fumes of hydrochloric acid and other chlorinated compounds as well as nitrogen oxides (NO_x) and sulfur oxides (SO_x). It is combustible (flash point 93.3°C).

USE

The primary use of sulfallate in the U.S. is as a pre-emergent selective herbicide to control certain annual grasses and broadleaf weeds around vegetable and fruit crops. Sulfallate also is used to control weeds among shrubbery and ornamental plants. Sulfallate was introduced as a herbicide in 1954 (IARC V.30, 1983).

PRODUCTION

There are no current data available on the production of sulfallate. The Chem Sources USA directory identified a single producer and three suppliers in 1986 (Chem Sources, 1986). The USITC identified a single company producing sulfallate since at least 1975 through 1982, with an implied annual production of > 5,000 lb (USITC, 1983). That producer has indicated

that they no longer produce the compound (Farm Chem. Hdbk., 1985). In 1978, 1 million lb of sulfallate was produced in the U.S. (SRI, 1986). Sulfallate was not reported in the 1979 TSCA Inventory. No data were available on imports or exports of this chemical. Commercial production of sulfallate in the U.S. was first reported in 1955 (IARC V.30, 1983).

EXPOSURE

The primary routes of potential human exposure to sulfallate are inhalation, ingestion, and dermal contact. A potential for exposure exists during the manufacture, formulation, and application of the herbicide. The National Occupational Hazard Survey, conducted by NIOSH from 1972 to 1974, provided no estimate of the number of workers potentially exposed to sulfallate. Agricultural workers have the greatest possible risk of sulfallate exposure and rural residents of agricultural communities may possibly be exposed to airborne residues of sulfallate after spraying operations. At commercially recommended application rates of 4 lb per gallon per acre, the average persistence of sulfallate in soil is three to six weeks. The general population may possibly be exposed through ingestion of residues in food crops.

REGULATIONS

EPA regulates sulfallate under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), Food, Drug, and Cosmetic Act (FD&CA), and Resource Conservation and Recovery Act (RCRA). Under FD&CA, EPA established tolerances for sulfallate residues on a variety of raw agricultural commodities. Enforcement of these tolerances is vested in FDA. FIFRA registers sulfallate as a herbicide because of its active ingredient. Under RCRA, EPA has proposed subjecting sulfallate to the hazardous waste disposal rule and to report/recordkeeping requirements. OSHA regulates sulfallate under the Hazard Communication Standard and as a chemical hazard in laboratories. Regulations are summarized in Volume II, Table B-135.